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## Treatment Outcomes and Perception of Social Acknowledgment in War Veterans: Follow-up Study

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**Aim** To assess treatment outcomes of psychotherapy for war veterans suffering from posttraumatic stress disorder (PTSD) and to investigate self-perceived social acknowledgment.

**Methods** In this prospective cohort study, a set of psychological instruments was used to assess the level of posttraumatic stress symptoms (Clinician-Administered PTSD Scale, Impact of Event Scale – Revised), symptoms of general psychopathology (Brief Symptom Inventory), quality of life (The Manchester Short Assessment of Quality of Life), and perceived social acknowledgment on a sample of 152 Croatian war veterans participating in group psychotherapy. All participants were interviewed at baseline and followed up after 3 and 12 months. We analyzed the changes in symptom levels over the course of one year, as well as the correlations between symptoms (both at baseline and after therapy) and perceived social acknowledgment.

**Results** The analysis of symptom levels at the beginning of group therapy and after 12 months showed minimal or no changes in their intensity. Only the symptoms of intrusion (ANOVA,  $F\text{-value} = 7.09$ ,  $P < 0.001$ ) were significantly reduced after a period of 12 months. Levels of hostility (ANOVA,  $F\text{-value} = 7.85$ ,  $P < 0.001$ ) and psychoticism were significantly increased (ANOVA,  $F\text{-value} = 7.80$ ,  $P < 0.001$ ) at the end of the treatment. Other categories of posttraumatic symptoms and the level of general psychopathology did not change significantly during the course of treatment. The results showed that war veterans perceive extremely low levels of social acknowledgment, especially from their wider social environment: 92.9% perceived a lack of acknowledgment from governmental institutions and 95.4% from the state in general.

**Conclusion** Despite some methodological constraints, our results showed that even 10 years after the traumatization, PTSD symptoms among war veterans remained intense and that undergoing therapy over a year did not produce significant improvements, except on the dimension of intrusion. Veterans were highly sensitive to the way their primary social environment and the society as a whole react to their problems.

Assessing treatment outcomes of therapeutic activities in war veterans is important for both methodological and clinical reasons. There is still a shortage of relevant studies (1), or at least of adequate follow-up studies dealing with the assessment of trauma-related treatment outcomes in our region (2). It is particularly important to identify the factors associated with positive outcomes of treatment and the process of adjustment (3-12). The existing treatment outcome studies provide strong evidence that contextual factors are of great relevance to any discussion of treatment (13,14). Because of these factors, an identical treatment can lead to different outcomes in different psychosocial conditions, especially in the treatment of trauma.

Posttraumatic stress disorder (PTSD) is common among combat veterans and is associated with significant psychiatric and medical comorbidity, social impairments, and reduced quality of life (13). Data gathered on Persian Gulf War veterans showed that veterans with PTSD, compared with veterans without PTSD diagnosis, had less social support and family cohesion, as well as a higher prevalence of avoidant coping styles (8).

The way that people are treated by others after traumatic experiences may affect their recovery. Survivors of war-related traumatic events are likely to be extremely sensitive on how others react to them and how they describe or make attributions about the traumatic event and the role they played in it. Differences in social acknowledgment may have an impact on how trauma survivors process their traumatic experiences, both emotionally and cognitively.

Social acknowledgment is defined as the person's perception of positive reactions from the society that recognizes the trauma they have experienced and their current difficult situation (15). The term "social" includes the following: closest social network of a victim (eg, partner, family, and friends); significant persons (eg, local authorities, clergy); groups (eg, at the workplace,

fellow citizens); and impersonal expressions of opinions (eg, media) about the experiences of the victims or survivors (15). Solomon et al (16,17) showed that poor social integration and low societal appreciation of homecoming soldiers in the Lebanon War was related to more severe post-traumatic symptomatology.

Some authors distinguish between the concepts of social support and social acknowledgment, even though their correlation is high (15). Social support can be defined as the degree of emotional and instrumental support a person receives from the people in his/her environment. Social acknowledgment includes the wider social context, which means that it is not simply individuals but also social pressure groups that influence the person with their judgments.

Positive social acknowledgment includes unconditional support to the person. However, trauma survivors can experience negative feedback as well, including indifference, rejection, and being blamed for their condition. As with stress, perceptions of social support may, on the one hand, be confounded with symptomatology (16) but, on the other hand, may be the best indicator of personal and situational resources (17-20).

The main goal of this study was to assess treatment outcomes (symptoms of intrusion, avoidance, and hyperarousal; associated symptoms of general psychopathology; subjective quality of life) for war veterans included in formal psychotherapy (21). In addition, we explored the relation between the scores on these outcome measures and perceived social acknowledgment.

## Participants and methods

### Participants

The data were gathered for a convenience sample of 152 male war veterans who received psychotherapy in four different clinics in Rijeka, Zagreb, and Čakovec between 2003 and 2005. This

number is about two thirds of the whole population of veterans included in therapy during the period. All participants had direct combat experience as members of the Croatian army during the 1991-1995 war in Croatia. Inclusion criteria for this study were age under 65 years, no severe mental impairment due to organic causes, and the capability of giving written informed consent. The participants were recruited from 9 different therapeutic groups.

#### **Treatment goals**

All veterans were included in the group psychotherapy. The majority of them had already received some form of psychological help prior to the treatment. In such cases, we defined the beginning of the new form of therapy as baseline. The therapeutic techniques applied were a combination of supportive and dynamic approaches. The elements of supportive psychotherapy were used in order to reduce symptoms of anxiety by creating a feeling of acceptance and understanding in a friendly and supportive environment. As one of the main problems that war veterans face is control of their behavior, especially aggression, some of the therapeutic goals were to re-establish control over one's aggressive reactions, overcome the marital problems and problems in adapting to the work place environment, and facilitate re-socialization. The participants also attended groups for psychoeducation in order to learn about the nature of their condition, as well as small-groups to work on their traumatic experiences. Group leaders were therapists with different levels of training in group psychotherapy. The sessions were held twice a week. More than 90% of patients also received some form of psychotropic medication.

Out of the sample of 177 veterans that we contacted, 152 met the inclusion criteria. Three veterans dropped out of therapy before the end of the first three months and another 4 dropped out before the final assessment after 12 months. The number of subjects with complete valid data

for all three assessments was 138. The veterans who completed their treatment and those who dropped out did not differ significantly in their demographic characteristics.

#### **Methods**

All subjects were interviewed at baseline and followed up after 3 and 12 months (the Clinician-Administered PTSD Scale questionnaire and Social acknowledgment questionnaire were administered at the first and at third point of measurement only).

The participants were informed on the purpose of the study and written consent was obtained from all of them. It was pointed out that their participation in the study would in no way influence their veteran status. The study was approved by the Ethical Committees of Rijeka and Zagreb Universities.

All interviews were conducted face-to-face by interviewers, who were trained psychologists but not involved in the treatment of the given patient. All interviewers had intensive training in the application of the instruments used in the study.

#### **Instruments**

The structured questions were used to assess the following participants' socio-demographic characteristics: age, sex, status, number of years in full time education, employment status, number of working hours if employed, state benefits, household income, marital status, number of children, type and number of individuals in their household, and type of accommodation.

*List of Life Stressors.* This instrument was created for the purpose of this study in order to assess relative exposure to traumatic events. The list is based on, and similar to, other methods used to assess trauma exposure. It consists of 18 traumatic events and registers whether, when, and how many times the event happened. The total score range is from 0 up to 18.

*Clinician-administered PTSD Scale (CAPS).*

This is a structured clinical interview designed to assess the 17 symptoms of Posttraumatic Stress Disorder (PTSD) outlined in the DSM-IV (22). The symptoms are divided into three clusters: intrusion, avoidance/numbing, and hyperarousal. The CAPS evaluates the frequency and intensity of both long-term and current PTSD symptoms and diagnostic status. These dual-time references help to determine the impact that PTSD symptoms have had on the subject's social and occupational functioning. Seventeen symptoms of PTSD, as well as symptoms of subjective distress and impairment in social and occupational functioning, are assessed on a scale from 0 to 4. The total score range varies from 0 to 40 for intrusion and hyperarousal subscales, and 0 to 58 for the avoidance subscale. Total score on CAPS is expressed as a sum of all answers pointing to intensity and frequency of symptoms.

*Impact of Event Scale-Revised (IES-R).* This scale is a self-report measure designed to assess current subjective distress for any specific life event (23). IES-R has 22 items, 7 items being added to the original 15-item IES. The instrument assesses 22 symptoms of intrusion, avoidance, and hyperarousal, noticed during the previous 7 days, on a 5-point Likert-type scale (0-4). The total score ranges from 0 to 4.

*Brief Symptom Inventory (BSI).* It measures current psychological symptom status and is oriented toward a psychiatric diagnosis (24). BSI yields scores on 9 syndrome constructs (somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) and provides 3 different total scores that indicate psychological distress (global severity index, positive symptom total, positive symptom distress index). Participants are asked to rate each item in the BSI on a scale of 0 to 4. It is a shortened version of Symptom Check List-90 questionnaire, containing 53 items. The total score ranges from 0 to 4.

*Manchester Short Assessment of Quality of life (MANSA).*

This is a brief instrument for the assessment of quality of life focusing on satisfaction with life as a whole, as well as with specific life domains. The instrument is widely used in mental health service research. It contains 16 items, 12 of which are questions on subjective quality of life rated on a 7 point Likert-type scale of satisfaction. Four questions are objective and have to be answered with yes or No. The total score ranges from 1 to 7.

*List of ways of coping with stress.* This list consists of 14 coping strategies that have been validated and shown to highly correlate with symptoms of posttraumatic stress in studies of similar populations (25). Participants are asked to indicate how often they used each coping strategy on a 4 point Likert-type scale (0-3). The total score ranges from 0 to 3.

*Social Acknowledgment Scale.* This instrument was created for the purpose of this study. It is designed to measure participants' subjective view on the level of acknowledgment they receive from their family, friends, acquaintances, state, and state institutions. It has 5 items that are assessed on a 4 point Likert-type scale (0 – not at all, 1 – very little, 2 – mostly yes, 3 – completely). The instruction stated: "Please assess how much people around you understand your problems and acknowledge what you have experienced." The total score ranges from 0 to 3.

The principal component analysis with varimax rotation has been performed on 5 items that form the scale. The goal of this part of analysis was to determine whether it is appropriate to talk about a single general factor of perceived dissatisfaction with social acknowledgment or it would be methodologically better founded to separate appraisals regarding different social strata (family, friends, etc). The analysis resulted in two significant principal components according to Kaiser-Guttman's criterion and the percentage of explained variance by two significant components before rotation was 68.6% (Table 1).

**Table 1.** Correlations between 5 scale items and two rotated components (Rotated Component Matrix)

Scale item	Component	
	1	2
Friends	0.766	0.079
Members of family	0.756	-0.041
Other people	0.735	0.317
State in general	-0.045	0.903
Administration	0.270	0.855

\*The principal component analysis is a multivariate statistical data reduction technique used to explain variability among observed variables in terms of fewer unobserved variables called components. Mathematically, components are formed as linear combinations of observed variables. According to common criteria, correlations between observed variables and components that are higher than 0.3 can be regarded as significant.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.623.

Following the results of factor analysis, the scale of social acknowledgment could be divided into two factors (subscales). The first factor, which we called “family and friends,” shows perceived acknowledgment from their client’s close social network (family, friends, and acquaintances). The second factor, termed “the state in general and people in state institutions” shows perceived acknowledgment from the state in general and the people that veterans encounter in governmental institutions.

The Cronbach  $\alpha$  reliability coefficient for the first 3-item long subscale (family and friends) is 0.63, and for the second (2 item long) subscale (state in general and people in administration) is 0.74.

#### Statistical analysis

The results were presented as frequencies and mean  $\pm$  standard deviation (SD). The principal component analysis with varimax rotation was performed to assess the latent structure of social acknowledgment questionnaire. Changes between different points of measurement were tested with repeated ANOVA and  $t$  test for paired samples. Correlations between the dimensions of social acknowledgment and other factors were assessed with Pearson correlation coefficient. The Statistical Package for the Social Sciences, version 14.0 (SPSS Inc, Chicago, IL, USA) was used for statistical analysis.

## Results

### Sociodemographic characteristics

The mean age of participants was  $40.2 \pm 6.5$  (range 29 to 60 years) (Table 2). More than three-fourths (77.7%) had a high school education, 48.9% of them owned the house or flat, half of them were employed, and one third were retired. Most of the participants were married (64.8%).

**Table 2.** Baseline sociodemographic characteristics of 152 war veterans included in study

Parameter	No (%)
Age (years):	
18-30	6 (4.0)
31-40	80 (52.6)
41-50	56 (36.8)
51-65	10 (6.6)
Education (years):	
1-8	19 (12.5)
8-12	119 (78.3)
$\geq 13$	14 (9.2)
Type of accommodation:	
own house or flat	74 (48.7)
house or flat of the partner	10 (6.6)
rented flat or house	22 (14.5)
with parents	32 (21.0)
other	14 (9.2)
Employment:	
employed	77 (50.7)
retired	50 (32.9)
non-employed	16 (10.5)
other (cohabitation, etc.)	9 (5.9)
Marital status:	
married	98 (64.5)
single	23 (15.1)
divorced/separated	22 (14.5)
widow	1 (0.7)
other	8 (5.2)

### Level of traumatic experience

In the List of Life Stressors, the subjects reported an average of  $6.9 \pm 2.7$  traumatic events (maximum 18). Most of them (81.3%) witnessed murder or violent death of a close person, 62.3% experienced serious accident, fire, or explosion, 50.9% experienced sudden death of a close person, 37.1% experienced serious injury, 17.6% experienced imprisonment, and 17% experienced torture. At least 8 years has passed since the participants’ experienced their last war-related traumatic event.



### Changes in levels of PTSD symptoms and general psychopathology over the course of therapy

Scores on most dimensions of general psychopathology were high at the beginning of treatment, as well as 3 and 12 months later (Table 3). The only significant difference was found on the scale that measures symptoms of intrusion, assessed both by the interviewers and the patients themselves. There was also a trend of the decrease in hyperarousal symptoms during 12 months of therapy, but it did not reach the significance level. We also found significantly increased levels of hostility and psychoticism at the end of the treatment. Scores on the dimensions of summarization and phobic anxiety increased during the first three months of therapy, but their scores at 12 months equaled those at baseline.

### Self-perceived social acknowledgment

Assessment of war veterans' self-perceived social acknowledgment showed low levels of satisfaction with understanding and acknowledgment from their social environment (Table 4).

More than one third (37.7%) of veterans reported that their family members did not understand them at all, or showed very little understanding for them, 64.5% reported the same for their friends, and 89.1% for other people they encountered. The majority (92.9%) perceived a lack of acknowledgment from people in governmental institutions and 95.4% from the government in general.

The results also showed there was no significant change in the perceived levels of social acknowledgment after 12 months of therapy.

**Table 3.** Changes in posttraumatic stress disorder in war veterans who underwent 12 mo of group psychotherapy (n = 138)

Measure	Scale scores (mean $\pm$ standard deviation)			F	P
	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>		
IES-R intrusion	2.84 $\pm$ 0.72	2.91 $\pm$ 0.62	2.70 $\pm$ 0.66	7.09	<0.001 <sup>†</sup>
IES-R avoidance	2.46 $\pm$ 0.57	2.51 $\pm$ 0.61	2.42 $\pm$ 0.58	1.22	0.298 <sup>‡</sup>
IES-R hyperarousal	3.15 $\pm$ 0.58	3.21 $\pm$ 0.53	3.10 $\pm$ 0.62	3.13	0.045 <sup>‡</sup>
CAPS – intrusion	23.40 $\pm$ 6.45	–	20.68 $\pm$ 6.39	28.68	0.001 <sup>†</sup>
CAPS – avoidance	33.24 $\pm$ 8.18	–	32.83 $\pm$ 7.51	0.36	0.550 <sup>‡</sup>
CAPS – hyperarousal	26.38 $\pm$ 5.97	–	25.23 $\pm$ 5.17	6.11	0.035 <sup>‡</sup>
MANSA – quality of life	3.36 $\pm$ 0.79	3.26 $\pm$ 0.77	3.24 $\pm$ 0.81	2.69	0.070 <sup>‡</sup>
BSI summarization	2.55 $\pm$ 0.76	2.73 $\pm$ 0.68	2.55 $\pm$ 0.79	7.26	<0.001 <sup>†</sup>
BSI obsessive - compulsive	2.84 $\pm$ 0.79	2.95 $\pm$ 0.67	2.96 $\pm$ 0.72	3.06	0.049 <sup>‡</sup>
BSI interpersonal sensitivity	2.33 $\pm$ 0.82	2.46 $\pm$ 0.90	2.46 $\pm$ 0.85	2.70	0.069 <sup>‡</sup>
BSI depression	2.57 $\pm$ 0.85	2.66 $\pm$ 0.78	2.62 $\pm$ 0.84	1.41	0.245 <sup>‡</sup>
BSI anxiety	2.74 $\pm$ 0.75	2.80 $\pm$ 0.69	2.77 $\pm$ 0.72	0.54	0.583 <sup>‡</sup>
BSI hostility	2.36 $\pm$ 0.83	2.61 $\pm$ 0.80	2.54 $\pm$ 0.87	7.85	<0.001 <sup>†</sup>
BSI phobic anxiety	2.26 $\pm$ 0.83	2.43 $\pm$ 0.83	2.26 $\pm$ 0.81	5.01	0.007 <sup>‡</sup>
BSI paranoid ideation	2.50 $\pm$ 0.76	2.62 $\pm$ 0.71	2.55 $\pm$ 0.75	2.44	0.089 <sup>‡</sup>
BSI psychoticism	1.91 $\pm$ 0.83	2.08 $\pm$ 0.83	2.12 $\pm$ 0.82	7.80	<0.001 <sup>†</sup>

\*Abbreviations: M<sub>1</sub> – baseline results; M<sub>2</sub> – results after 3 mo of treatment; M<sub>3</sub> – results after 12 mo of treatment; F – F value for repeated measures analysis for variance; P – Significance for F-value; N – number of participants with results on all three measures; IES-R – Impact of Event Scale-Revised (23); CAPS – Clinician-Administered PTSD Scale (22); MANSA – The Manchester Short Assessment of Quality of life (26); BSI – Clinician-administered PTSD Scale (24).

<sup>†</sup>Post-hoc paired samples t test showed a statistically significant difference between 1st and 3rd measurement points ( $P < 0.01$ ).

<sup>‡</sup>Post-hoc paired samples t test showed a statistically insignificant difference between 1st and 3rd measurement points ( $P < 0.01$ ).

**Table 4.** Frequencies (No. of patients, %), means and standard deviations (M $\pm$ SD) for items in Social acknowledgment questionnaire at the baseline (1st, n = 152) and after 12 mo of treatment (2nd, n = 145)

Item	Scale response								M±SD	
	(0) not at all		(1) a little bit		(2) mostly yes		(3) completely			
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
Members of your family	16 (10.4)	13 (9.5)	41 (27.3)	38 (25.9)	66 (43.5)	64 (44.0)	29 (18.8)	30 (20.6)	1.71 ± 0.89	1.76 ± 0.89
Your friends	24 (15.5)	25 (17.2)	74 (49.0)	65 (44.8)	43 (28.4)	49 (33.6)	11 (7.1)	6 (4.4)	1.27 ± 0.81	1.25 ± 0.79
Other people that you meet (neighbors, acquaintances)	75 (49.7)	71 (49.2)	60 (39.4)	65 (44.8)	16 (10.3)	9 (6.0)	1 (0.6)	0 (0.0)	0.62 ± 0.70	0.57 ± 0.61
People from government institutions	107 (70.3)	102 (70.7)	34 (22.6)	38 (25.9)	10 (6.5)	5 (3.4)	1 (0.6)	0 (0.0)	0.37 ± 0.64	0.33 ± 0.54
State in general	114 (74.8)	116 (80.2)	31 (20.7)	23 (15.5)	1 (3.9)	6 (3.4)	1 (0.6)	1 (0.9)	0.30 ± 0.57	0.25 ± 0.56

**Table 5.** Correlations between the two factors of perceived social acknowledgment and some of the patients' individual characteristics at the beginning of therapy and after 12 mo (Pearson correlation coefficient.\*

Personal characteristics	At the base line (N = 152)		After 12 mo (N = 145)	
	factor 1 (family and friends)	factor 2 (state and institutions)	factor 1 (family and friends)	factor 2 (state and institutions)
Number of traumatic events	-0.103	-0.036	–	–
General psychopathology:				
BSI depression	-0.206 <sup>†</sup>	-0.091	-0.281 <sup>‡</sup>	-0.099
BSI interpersonal sensitivity	-0.199	-0.094	-0.114	-0.083
BSI hostility	-0.162 <sup>‡</sup>	-0.067	-0.263 <sup>‡</sup>	0.059
BSI paranoid ideation	-0.123	-0.083	-0.326 <sup>‡</sup>	-0.064
BSI psychoticism	-0.111	-0.077	-0.278 <sup>‡</sup>	-0.065
subjective quality of life	0.294 <sup>‡</sup>	0.284 <sup>‡</sup>	0.409 <sup>‡</sup>	0.166 <sup>†</sup>
PTSD symptomatology (estimated by interviewer):				
CAPS – avoidance subscale	-0.266 <sup>‡</sup>	-0.110	-0.345 <sup>‡</sup>	-0.093
CAPS – hyperarousal subscale	-0.174 <sup>†</sup>	-0.011	-0.073	-0.108
CAPS – intrusion subscale	0.047	-0.048	-0.068	0.046
coping strategies				
perceived positive consequences	0.161 <sup>†</sup>	0.172 <sup>†</sup>	0.244 <sup>‡</sup>	0.254 <sup>‡</sup>
adaptive coping	0.248 <sup>‡</sup>	0.000	0.196 <sup>†</sup>	0.263 <sup>‡</sup>

\*Abbreviations: BSI – Clinician-administered PTSD Scale (24); PTSD – posttraumatic stress disorder; CAPS – Clinician-Administered PTSD Scale (22).

<sup>†</sup> $P < 0.01$ , Pearson correlation coefficient.

<sup>‡</sup> $P < 0.05$ , Pearson correlation coefficient.

Veterans were less satisfied with the level of acknowledgment from the state and people working in governmental institutions than with the acknowledgment from friends and family (Tables 4).

There was no significant change in average results on the subscales of Social acknowledgment scale after 12 months in therapy.

#### **Association between perceived social acknowledgment and some other personal characteristics of war veterans**

Low perceived levels of social acknowledgment from family and friends correlated with higher levels of depression, interpersonal sensitivity, hostility, paranoid ideation, and psychoticism (Table 5).

In general, results indicated low but statistically significant correlations between perceived social acknowledgment and some measures of treatment outcomes and individual characteristics of veterans (Table 5).

A higher perceived quality of life correlated with higher satisfaction with social acknowledgment. At both points of measurement, low social acknowledgment correlated with elevated scores on the avoidance subscale of CAPS. We also

found positive correlation between higher levels of social acknowledgment and adaptive ways of coping (eg, talking to someone about one's feelings, trying to work in organizations where one can actively help) as well as perceived positive consequences of the traumatic experience (eg, having rediscovered what is really important in life, having become stronger after all they have been through).

#### **Discussion**

The analysis of symptom levels in war veterans under treatment for PTSD over the course of one year showed that there was no improvement in most of the applied outcome measures. The only significant difference was found on the scale that measures symptoms of intrusion, assessed both by the interviewers and the veterans themselves. A significant decrease in the levels of intrusion found in our sample is consistent with previous findings on the long-term outcomes of PTSD in Croatian war veterans (1). The literature confirms that this set of symptoms is most easily treated, while the symptoms of hyperarousal tend to persist over a longer period of time (27). Relevant studies have shown that psycho-



therapeutic treatment of PTSD often does not result in any significant decrease in the symptom intensity, especially in the case of combat related PTSD (7,27). Moreover, improvements that sometimes can be observed during treatment are frequently lost only a year later (27). This could be due to a number of factors, such as the type of psychotherapy applied, length of treatment, relative competence of the therapist, or the nature of the condition itself. However, previous research has shown that when it comes to war veterans, the length of treatment itself does not play a significant role in the therapy outcome (27). The level of training and experience of the therapist was found to be an important factor, but the reality of a post-war environment is often such that there are not enough highly trained therapists.

Our results showed that war veterans generally perceived extremely low levels of social acknowledgment. Even though we cannot claim that low levels of perceived social acknowledgment result in little or no treatment benefits, we have to take into account low but significant correlations between perceived social acknowledgment and some other measures of adjustment such as: overall quality of life, symptoms of avoidance, depression, hostility, paranoid ideation, and psychoticism. It must also be noted that higher perceived social acknowledgment is correlated with a greater number of perceived benefits of personal war experience and more adaptive ways of coping with stress which indirectly lead to a decrease in the symptoms and an improvement in the general condition.

Our results showed that war veterans generally perceived low levels of social acknowledgment both at the baseline and after a year of therapy. The reported levels of social acknowledgment from state and governmental institutions were especially low, while the findings for perceived acknowledgment from friends and family showed somewhat greater variance.

Findings by Maercker et al (15) on East German former political prisoners suggest that per-

ceived rejection by an extended social environment (eg, acquaintances, colleagues, local authorities) could be even more important than perceived rejection by family. The author found that a specific concept of social acknowledgment could explain a higher proportion of PTSD variance than standard measures of social support.

The fact that the appraisals are highly asymmetric, ie, that the majority of subjects express extreme dissatisfaction with social acknowledgment is a methodological issue. Statistically speaking, it significantly lowers the variability of results and can thus result in lower correlation coefficients. We consider the reported coefficients to be important for understanding the relevance of individual perceptions of social acknowledgment in the context of treatment of war trauma survivors. These results suggest a need for further development of perceived social acknowledgment measures and their inclusion in evaluation studies.

A question remains as to whether the perceived lack of social acknowledgment in our sample is a consequence of the participants' condition, an actual response from their specific posttraumatic environment, or a result of a personal trait that interferes with the treatment. It is possible that this perception of inadequate acknowledgment can be a consequence of the cognitive biases characteristic for PTSD (eg, general feeling of alienation). Foa et al (5) emphasized that such possible biases may interfere with perception of self and others in trauma survivors. Another study has shown that, although both objective and subjective indicators of event stressfulness and perceived social support can predict PTSD, the subjective parameters are of greater significance (16). Some authors emphasize that the context in which the therapy is being conducted is of great importance for the veteran's adjustment and treatment efficacy (28,29). It should be stressed that, in the case of war veterans, social acceptance serves as one of the most significant factors in a successful integration of

trauma. The results obtained among Vietnam War veterans emphasize the importance of post-war emotional support and life events for the expression of chronic PTSD (30-33). Gregurek et al (33) presented an example of disabled war veterans who adamantly refused any possibility of returning home, wanting to stay in the familiar surroundings of the hospital as long as possible. The authors suggest that the functioning of the group was negatively influenced by the out-group factors. Support that is comprised only of financial and material assistance seems to be inadequate for this vulnerable group. The cognitive approach stresses a large disproportion between veterans' perceived investment and other people's reaction to his or her sacrifice toward a common goal. It is yet to be determined whether the expectations of veterans are unrealistic or if they really are experiencing a lack of understanding within the community. Material benefits for the veterans were extensive, but they obviously failed to replace symbolic expressions of recognition and gratitude.

In survivors of other traumatic events, such as traffic accidents and natural disasters, social environment and its changes do not necessarily have this much impact on the individual's condition.

This research has some methodological constraints that limit the range of the conclusions. The majority of war veterans in our sample had been previously included in various forms of treatment, so we had only a provisory baseline. We must also take into account the possibility of an over-reporting of symptoms (34), even though the majority of included veterans had already obtained their status-related rights. The possibility of making conclusions is also hindered by the fact that we have not had any form of control group and explored only the effects of supportive group therapy. The results indicate that even over a long period of time war veterans remain highly sensitive to the way their environment reacts to their role in the war and that the majority has not yet worked through their trauma.

Future research should try to measure the objective level of acknowledgment that war trauma survivors receive from the community and to explore the way this acknowledgment is perceived by members of community without trauma experience. Cross cultural aspects of therapy for war related trauma should also be addressed. Recognition and identification of external factors that influence treatment efficacy is of high relevance for a better understanding of the therapeutic process, especially when it comes to the evaluation of therapy for clients with war trauma experience.

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#### References

- 1 Britvic D, Radelic N, Urtic I. Long-term dynamic-oriented group psychotherapy of posttraumatic stress disorder in war veterans: prospective study of five-year treatment. *Croat Med J.* 2006;47:76-84. [Medline:16489700](#)
- 2 Prorokovic A, Cavka M, Cubela Adoric V. Psychosomatic and depressive symptoms in civilians, refugees, and soldiers: 1993-2004 longitudinal study in Croatia. *Croat Med J.* 2005;46:275-81. [Medline:15849850](#)
- 3 Kazdin AE. Research design in clinical psychology. 4th ed. Needham Heights (MA): Allyn & Bacon; 2003.
- 4 Bolton EE, Lambert JF, Wolf EJ, Raja S, Varra AA, Fisher LM. Evaluating a cognitive-behavioral group treatment program for veterans with posttraumatic stress disorder. *Psychol Serv.* 2004;1:140-6.
- 5 Foa EB, Meadows EA. Psychosocial treatments for posttraumatic stress disorder: a critical review. *Annu Rev Psychol.* 1997;48:449-80. [Medline:9046566](#)
- 6 Gray MJ, Bolton EE, Litz BT. A longitudinal analysis of PTSD symptom course: delayed-onset PTSD in Somalia peacekeepers. *J Consult Clin Psychol.* 2004;72:909-13. [Medline:15482050](#)
- 7 Benyamini Y, Solomon Z. Combat stress reactions, posttraumatic stress disorder, cumulative life stress, and physical health among Israeli veterans twenty years after exposure to combat. *Soc Sci Med.* 2005;61:1267-77. [Medline:15970236](#)
- 8 Agaibi CE, Wilson JP. Trauma, PTSD, and resilience: a review of the literature. *Trauma Violence Abuse.* 2005;6:195-216. [Medline:16237155](#)
- 9 Cook JM, Elhai JD, Cassidy EL, Ruzek JI, Ram GD, Sheikh JI. Assessment of trauma exposure and post-traumatic stress in long-term care veterans: preliminary data on psychometrics and post-traumatic stress disorder prevalence. *Mil Med.* 2005;170:862-6. [Medline:16435760](#)

- 10 Elhai JD, Reeves AN, Frueh BC. Predictors of mental health and medical service use in veterans presenting with combat-related posttraumatic stress disorder. *Psychol Serv*. 2004;1:111-9.
- 11 Ford JD, Fisher P, Larson L. Object relations as a predictor of treatment outcome with chronic posttraumatic stress disorder. *J Consult Clin Psychol*. 1997;65:547-59. [Medline:9256555](#)
- 12 Wolfe J, Erickson DJ, Sharkansky EJ, King DW, King LA. Course and predictors of posttraumatic stress disorder among Gulf War veterans: a prospective analysis. *J Consult Clin Psychol*. 1999;67:520-8. [Medline:10450622](#)
- 13 Frueh BC, Elhai JD, Kaloupek DG. Unresolved issues in the assessment of trauma exposure and posttraumatic reactions. In: Rosen GM, editor. *Posttraumatic stress disorder: issues and controversies*. West Sussex: John Wiley and Sons, Ltd.; 2004. p.63-84.
- 14 Chester B, Jaranson JM. The context of survival and destruction: conducting psychotherapy with survivors of torture. *National Center for Post Traumatic Stress Disorder Clinical Quarterly*. 1994;4:17-20.
- 15 Maercker A, Muller J. Social acknowledgment as a victim or survivor: a scale to measure a recovery factor of PTSD. *J Trauma Stress*. 2004;17:345-51. [Medline:15462543](#)
- 16 Solomon Z, Mikulincer M, Avitzur E. Coping, locus of control, social support, and combat-related posttraumatic stress disorder: a prospective study. *J Pers Soc Psychol*. 1988;55:279-85. [Medline:3171908](#)
- 17 Solomon Z, Mikulincer M, Hobfoll SE. Objective versus subjective measurement of stress and social support: combat-related reactions. *J Consult Clin Psychol*. 1987;55:577-83. [Medline:3624615](#)
- 18 Keane TM, Scott WO, Chavoya GA, Lamparski DM, Fairbank JA. Social support in Vietnam veterans with posttraumatic stress disorder: a comparative analysis. *J Consult Clin Psychol*. 1985;53:95-102. [Medline:3980835](#)
- 19 Sutker PB, Davis JM, Uddo M, Ditta SR. War zone stress, personal resources, and PTSD in Persian Gulf War returnees. *J Abnorm Psychol*. 1995;104:444-52. [Medline:7673568](#)
- 20 Jordan BK, Marmar CR, Fairbank JA, Schlenger WE, Kulka RA, Hough RL, et al. Problems in families of male Vietnam veterans with posttraumatic stress disorder. *J Consult Clin Psychol*. 1992;60:916-26. [Medline:1460153](#)
- 21 Priebe S, Gavrilović J, Schuetzwohl M, Lečić-Toševski D, Ljubotina D, Bravo-Mehmedbašić A, Frančišković T. Rationale and method of the STOP study – study on treatment behaviour and outcomes of treatment in people with posttraumatic stress following conflicts in ex Yugoslavia. *Psihijatrija danas*. 2002;34:133-43.
- 22 Weathers FW, Ruscio AM, Keane TM. Psychometric properties of nine scoring rules for the Clinician-Administered Posttraumatic Stress Disorder Scale. *Psychol Assess*. 1999;11:124-33.
- 23 Weiss DS, Marmar CR. The impact of Event Scale Revised. In: Wilson JP, Keane TM, editors. *Assessing psychological trauma and PTSD – a practitioners handbook*. New York (NY): Guilford Press; 1997.
- 24 Derogatis LR, Melisaratos N. The Brief Symptom Inventory: an introductory report. *Psychol Med*. 1983;13:595-605. [Medline:6622612](#)
- 25 Arcel LT, Ljubotina D. Assessment of psycho-social status and treatment of refugee women and their families. In: Arcel LT, Folnegovic-Smalc V, Tocilj-Simunkovic G, Kozaric-Kovacic D, Ljubotina D, editors. *Psychosocial help to war victims: women refugees and their families*. Zagreb: Nakladnistvo Lumin; 1995. p. 114-17.
- 26 Priebe S, Huxley P, Knight S, Evans S. Application and results of the Manchester Short Assessment of Quality of Life (MANSA). *Int J Soc Psychiatry*. 1999;45:7-12. [Medline:10443245](#)
- 27 Foa EB, Keane TM, Friedman MJ, editors. *Effective treatments for PTSD: practice guidelines from the International Society for Traumatic Stress Studies*. New York (NY): Guilford Press; 2000.
- 28 Kozaric-Kovacic D, Kocijan-Hercigonja D, Jambrosic A. Psychiatric help to psychotraumatised persons during and after war in Croatia. *Croat Med J*. 2002;43:221-8. [Medline:11885051](#)
- 29 Arcel TL, Folnegović-Šmalc V, Tocilj-Šimunković G, Kozarić-Kovačić D, Ljubotina D. Ethnic cleansing and post-traumatic coping – war violence, PTSD, depression, anxiety, and coping in Bosnian and Croatian refugees. A transactional approach. In: Arcel TL, Tocilj-Šimunković G, editors. *War violence, trauma and the coping process*. Copenhagen: IRCT; 1998. p. 45-78.
- 30 King DW, King LA, Foy DW, Gudnowski DM. Prewar factors in combat-related posttraumatic stress disorder: structural equation modeling with a national sample of female and male Vietnam veterans. *J Consult Clin Psychol*. 1996;64:520-31. [Medline:8698946](#)
- 31 Frueh BC, Elhai JD, Hamner MB, Magruder KM, Sauvageot JA, Mintzer J. Elderly veterans with combat-related posttraumatic stress disorder in specialty care. *J Nerv Ment Dis*. 2004;192:75-9. [Medline:14718781](#)
- 32 Stretch RH. Psychosocial readjustment of Canadian Vietnam veterans. *J Consult Clin Psychol*. 1991;59:188-9. [Medline:2002137](#)
- 33 Gregurek R, Pavic L, Vuger-Kovacic H, Potrebica S, Bitar Z, Kovacic D, et al. Increase of frequency of post-traumatic stress disorder in disabled war veterans during prolonged stay in a rehabilitation hospital. *Croat Med J*. 2001;42:161-4. [Medline:11259738](#)
- 34 Frueh BC, Elhai JD. The Problem of Symptom Overreporting in the Assessment of PTSD in Combat Veterans. *Directions in clinical psychology*. Long Island (NY): Hatherleigh; 2002. p. 13-23.